

c) Define:

i) Isotopes

iii) Atomic number

## 17103

## 15162

<i>2</i> H00	urs / 50 Ma	IFKS	Seat No.								
	Instructions:	(2) Illustr (3) Figure	estions are <b>con</b> ate your answe es to the <b>right</b> i ne suitable data	ers wi Indica	th nea ate <b>ful</b> l	! mark		hereve	e <b>r</b> nece	essary	<i>?</i> .
										N	Aarks
1. Atte	empt <b>any nine</b> of the	e following:									(18)
a)	Distinguish between orbit and orbital (Any two points).									2	
b)	State Hund's Rule of Maximum Multiplicity.									2	
	Distinguish between positive electrovalency and negative electrovalency (Any two points).										2
d)	State two assumptions of Arrhenius theory of ionization.									2	
e)	Name the four factors which affect degree of ionisation.									2	
f)	State Faraday's Second Law of Electrolysis.									2	
_	Why blue colour of copper sulphate solution turns to Colourless after its electrolysis using platinum electrodes?								ing	2	
h)	Define:										
	i) Ore	ii)	Gangue.								2
i)	Write the two purposes of making alloys with one example of each.									2	
j)	Give composition of Duralumin.									2	
k)	Give two properties and related applications of plastics.									2	
1)	Define:										
	i) Elasticity	ii)	Tack.								2
<b>2.</b> Atte	empt <b>any four</b> of the	e following:									(16)
a)	Write orbital electronic configuration of <sub>13</sub> Al <sup>27</sup> , <sub>20</sub> Ca <sup>40</sup> , <sub>24</sub> Cr <sup>52</sup> , <sub>10</sub> Ne <sup>20</sup> .									4	

b) Describe formation of  $\operatorname{CaCl}_2$  molecule with diagram and name the type of bonding.

ii) Isobars

iv) Atomic mass number.

Marks

- d) State Faraday's first law of electrolysis. When 0.3956 g of copper was deposited by a current of 0.4 ampere in 50 mins. What is ECE of copper?
- e) Explain electrorefining of blister copper with diagram.
- f) Define pH. Calculate pH of acidic solution having 2.5×10<sup>-3</sup> gram ions per litre of hydrogen ion concentration.

## 3. Attempt any four of the following:

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- a) Describe electromagnetic separation process with example.
- b) Define:
  - i) Tensile strength
  - ii) Soldering
  - iii) Castability
  - iv) Machinability.
- c) Explain fusion method for preparation of alloy with example.
- d) Describe vulcanisation of rubber. Why is rubber vulcanised?
- e) Distinguish between thermosoftening and thermosetting plastics.
- f) Define thermocole. Give its properties and applications.